

**2004  
State Implementation Plan (SIP)  
for Ozone  
in the San Joaquin Valley**

**Fresno  
October 28, 2004**



**Air Resources Board**

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**California Environmental Protection Agency**

# Today's Decision

Consider approval  
of the 2004  
San Joaquin Valley  
SIP for the federal  
1-hour ozone  
standard



# **Requirement for This Plan**

- **Despite national transition to 8-hour standard, Valley needs to satisfy an outstanding planning obligation**
- **U.S. EPA gave affected areas several options for compliance**
- **Valley chose to develop this plan and additional controls**

# Presentation Overview

- Challenge facing the region
- Ozone air quality trend
- Ozone-forming emissions
- SIP framework
- Valley plan review

# Challenge Facing the Region

# **Air Quality Challenge**

- **Valley continues to violate State and federal standards for ozone and PM**
- **Today's plan focuses on federal 1-hour ozone attainment**
- **Emphasis over next few years will be on federal 8-hour ozone and PM<sub>2.5</sub> standards**

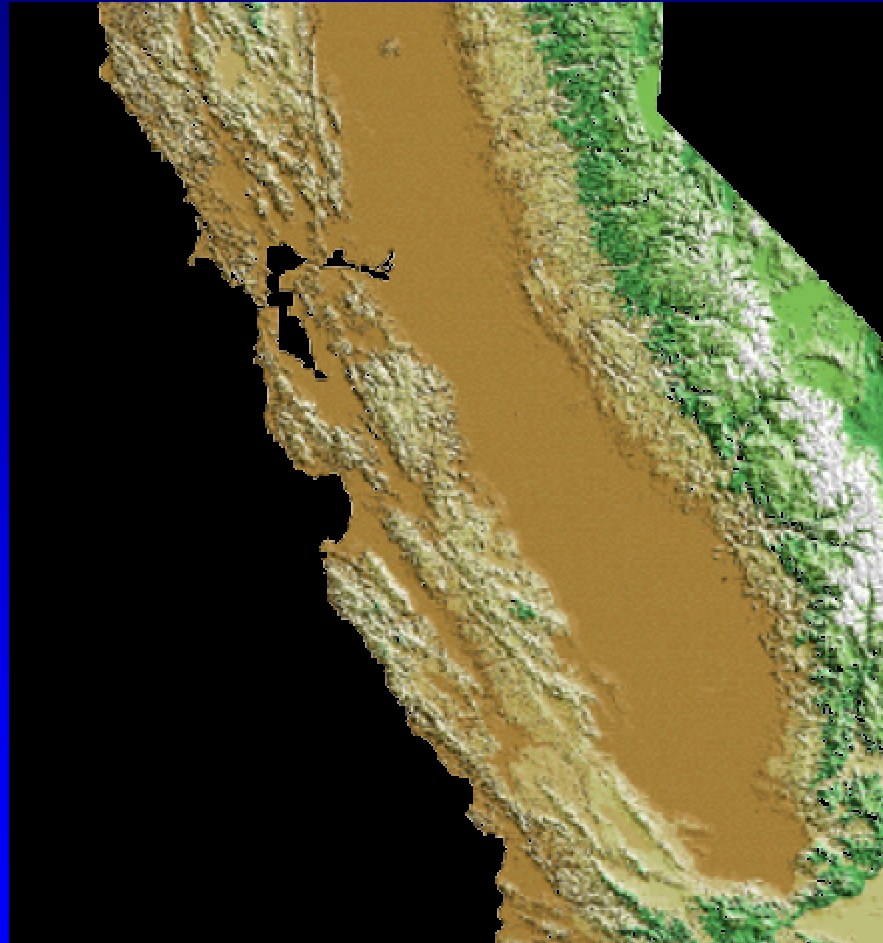
# Ozone Health Effects

- Damages lungs
- Causes chest pain, coughing, shortness of breath and irritation
- Worsens respiratory diseases like asthma
- Compromises the body's ability to fight respiratory infections



# Valley's Ozone System

- Emissions  
(VOC and NO<sub>x</sub>)
- Topography
- Meteorology

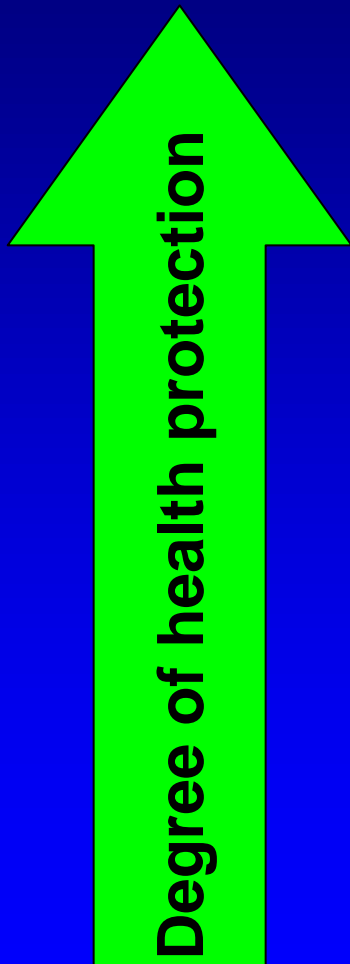




# **Air Quality Standards**

- **Federal and State air quality standards set to protect public health**
- **Economics considered in plans and control measures**
- **0.12 ppm (or 120 ppb) federal 1-hour ozone standard**

# Immediate Challenge: Federal 1-Hour Ozone Standard



State 8-hour standard  
being developed

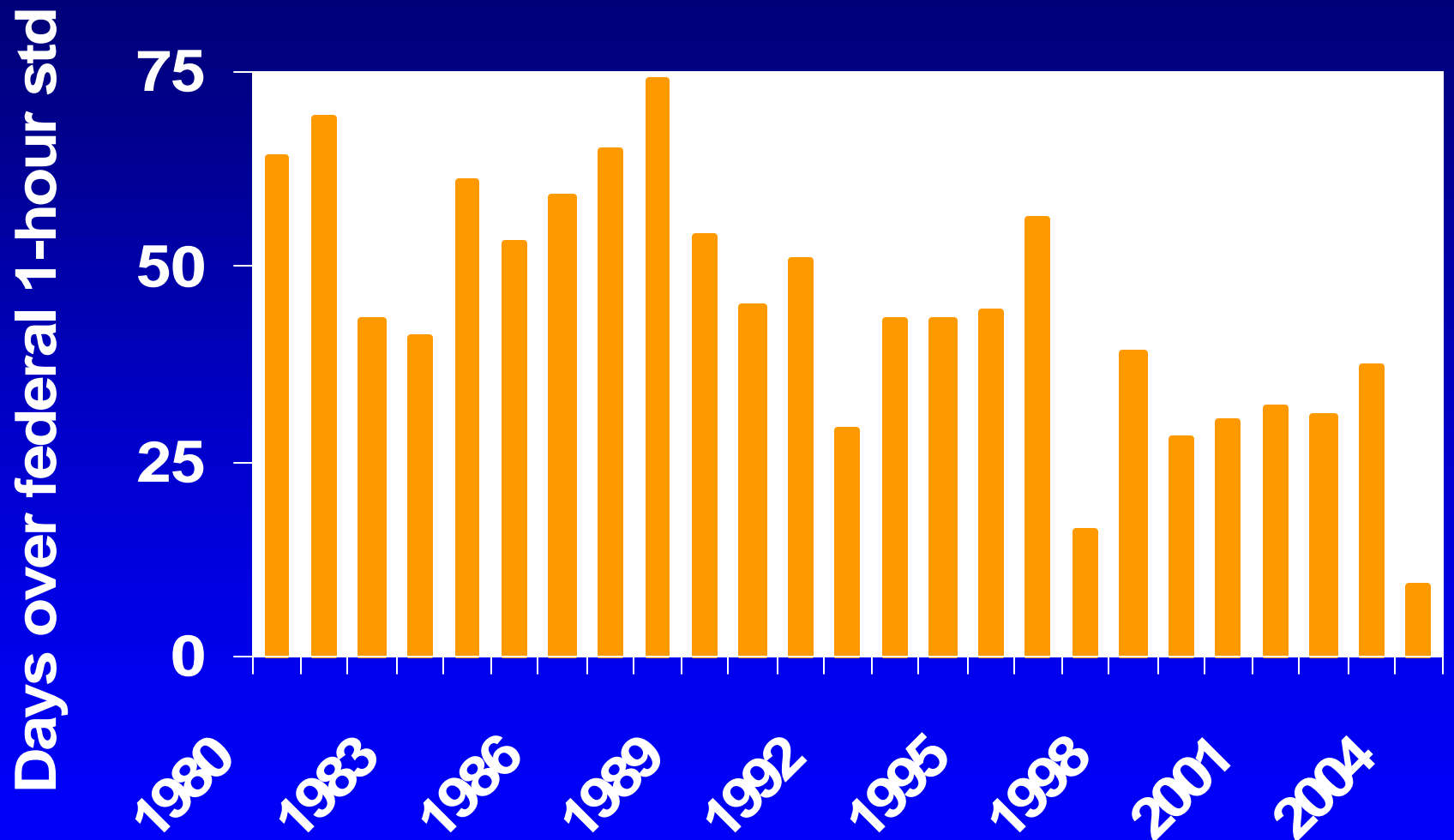
State 1-hour

Federal 8-hour

Federal 1-hour

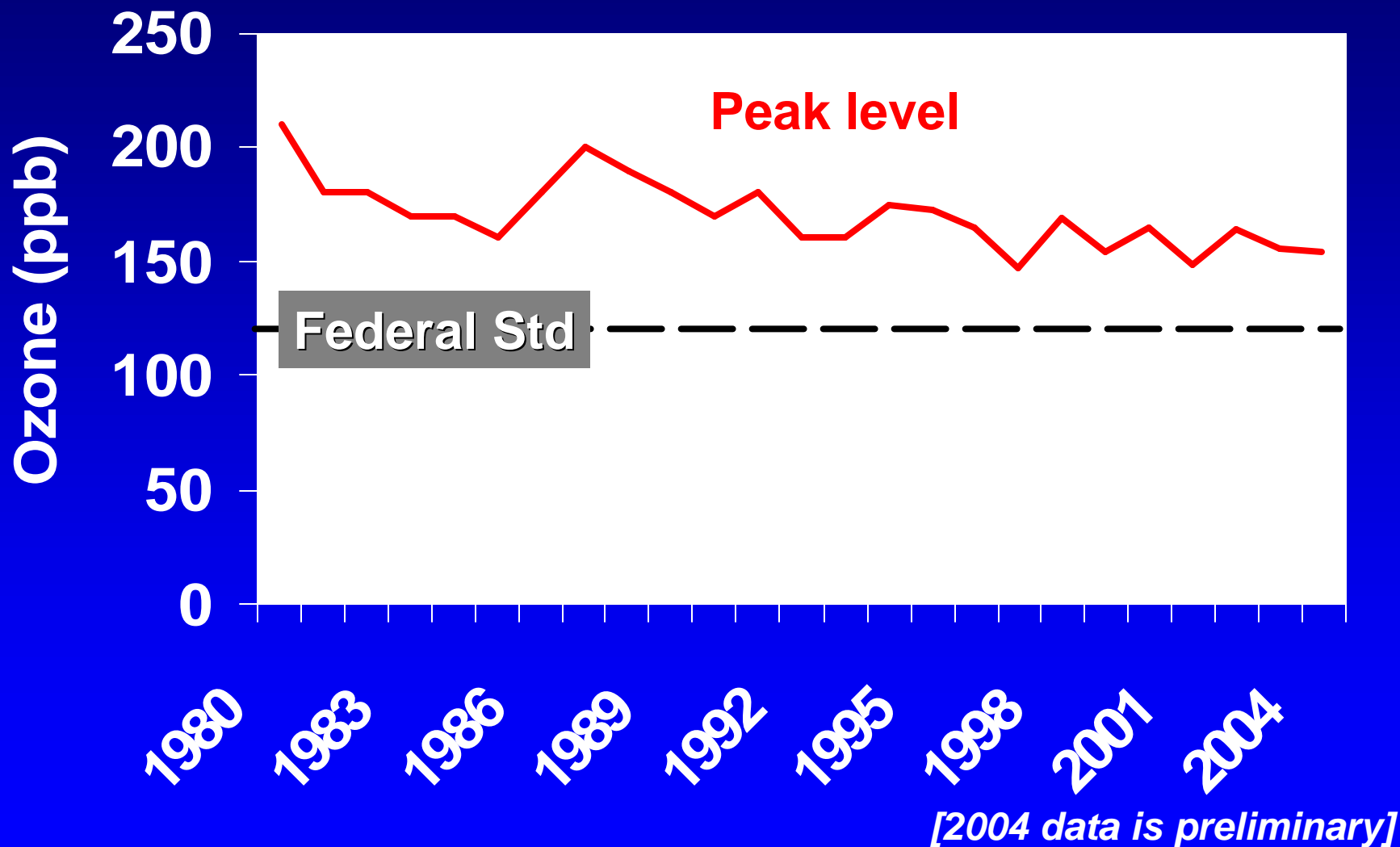
# Valley Ozone Air Quality Trend

# Fewer Days with Unhealthy Ozone



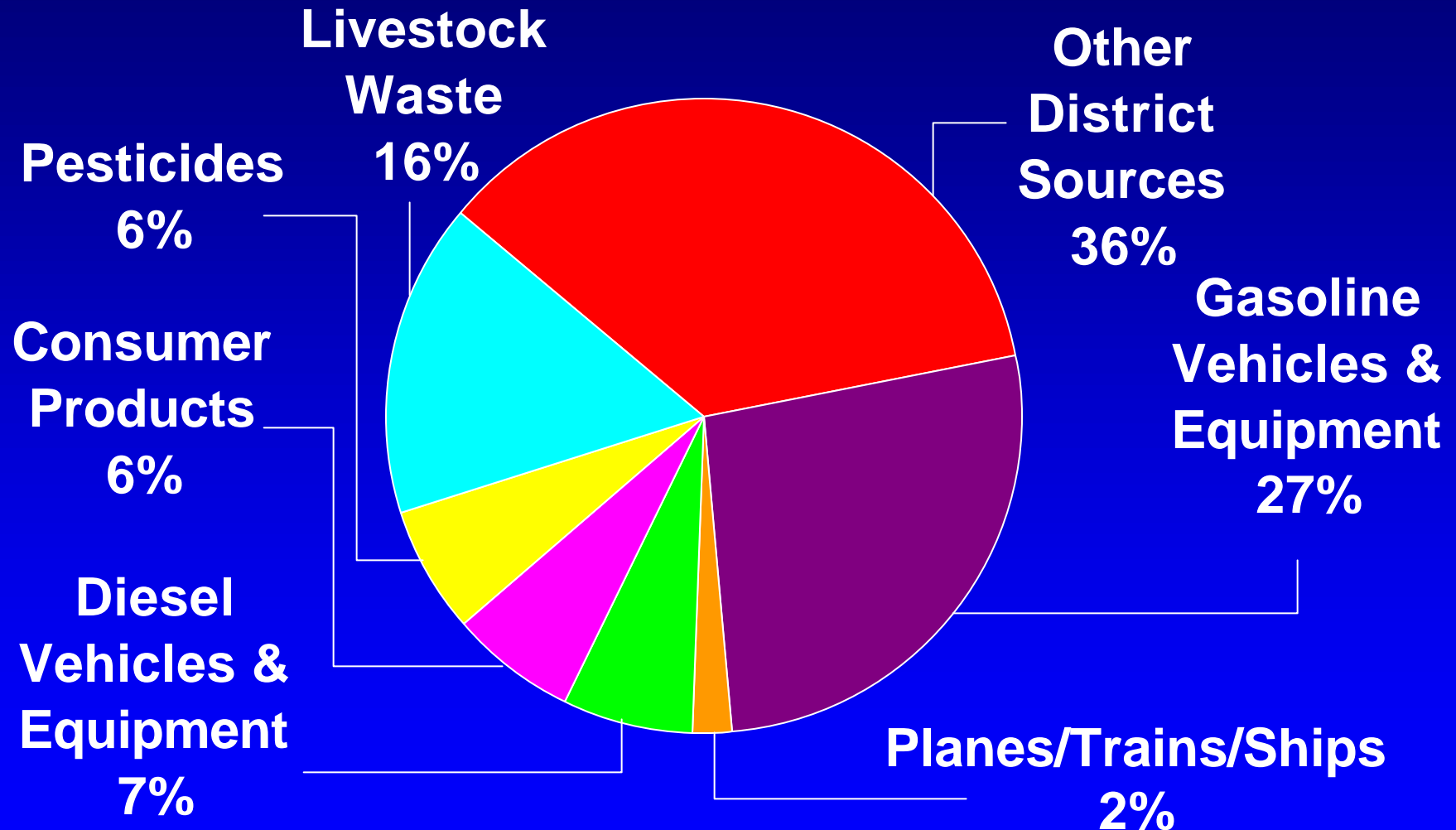
*[2004 data is preliminary]*

# Slight Decline in Peak Ozone Levels

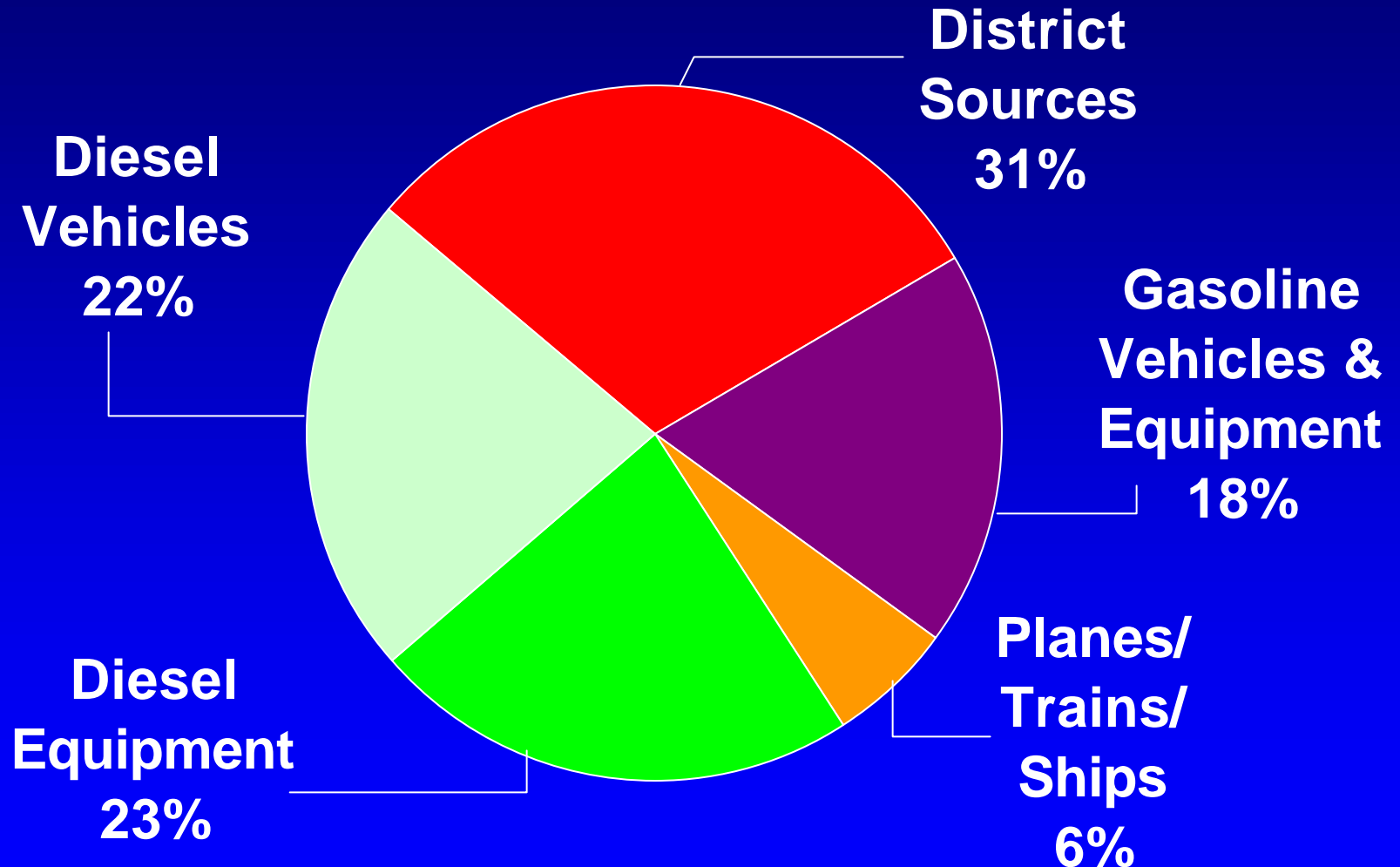


# Valley Ozone-Forming Emissions

# 2004 VOC Emissions: 400 tpd

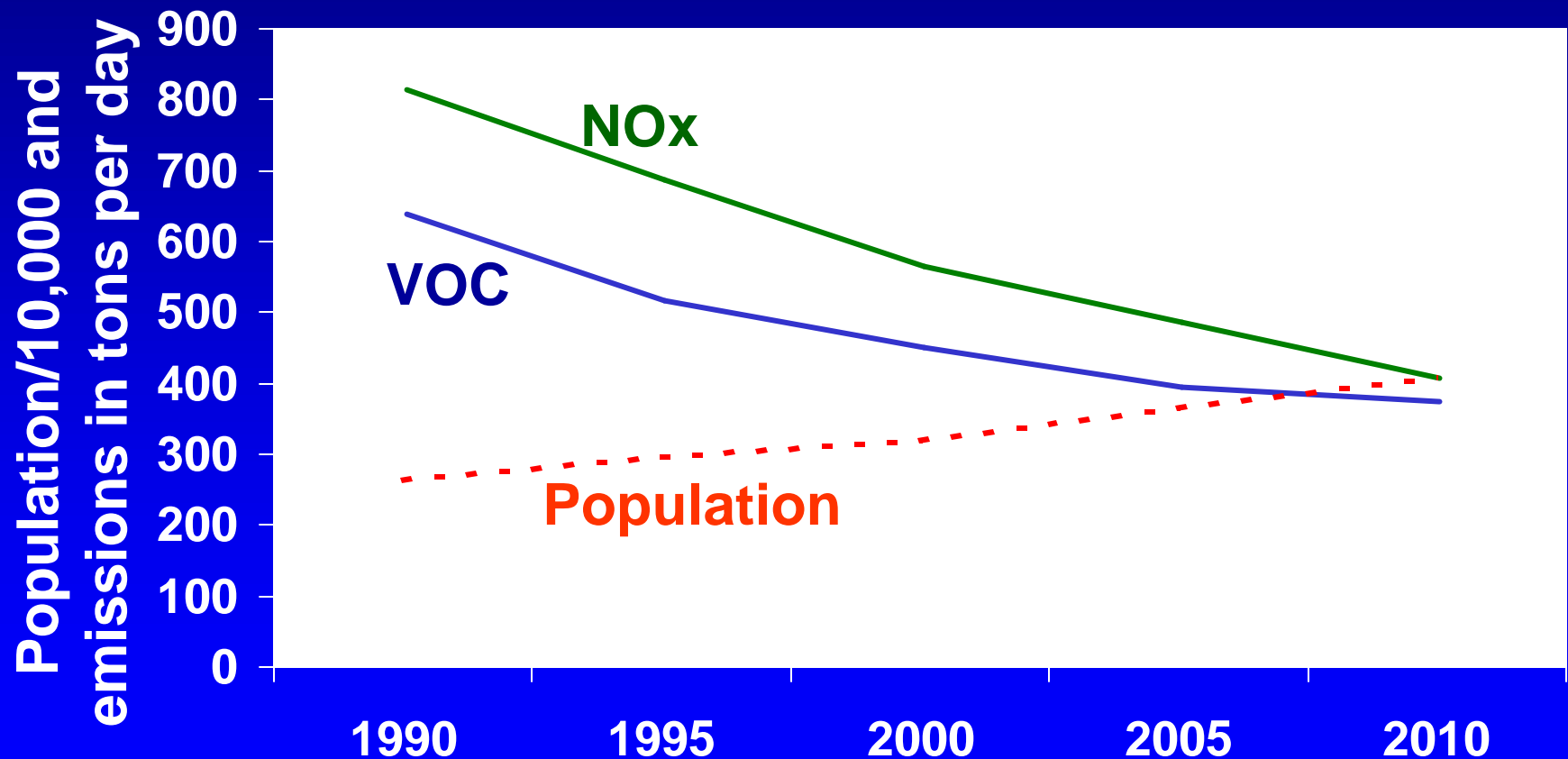


# 2004 NOx Emissions: 500 tpd





# Emissions Cut More Than 40% While Population Grows Over 50%



# SIP Framework

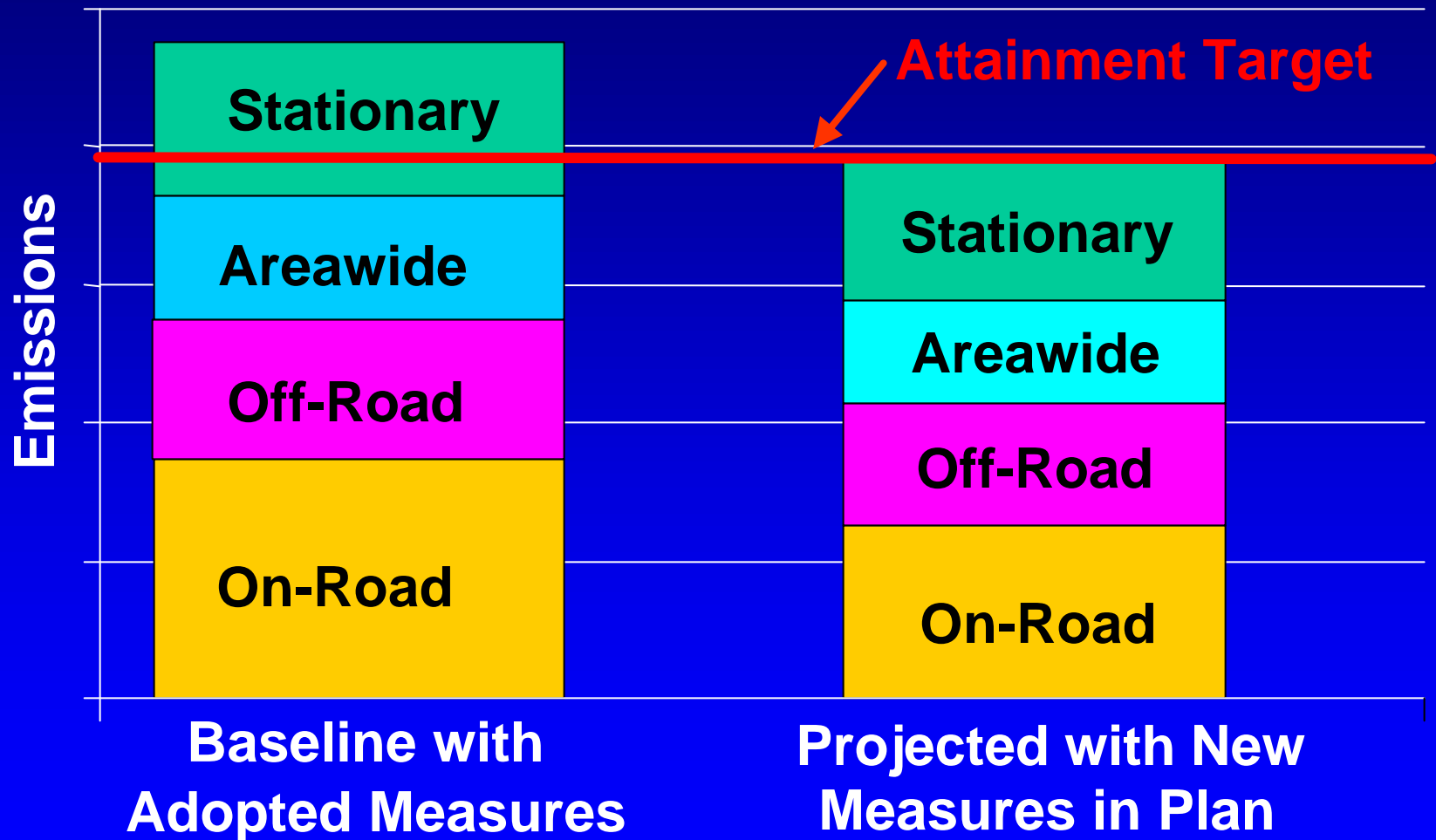
# **SIP Overview**

- **Blueprint for meeting the federal standard (“attainment demonstration”)**
- **Technical foundation (monitoring data, emissions, air quality modeling)**
- **Specific measures to reduce emissions**
- **Emission “budgets” for transportation**
- **Legal mandate to attain by deadline**

# Attainment Demonstration

- **Inventory of emissions and sources**
- **Modeling to relate measured ozone to emissions considering weather and chemistry**
- **Control strategy to meet emissions target**

# Attainment Emissions



# Transportation Conformity

- **Transportation plans must “conform” to air quality plans**
- **Future vehicle emissions with new transportation projects need to fit within the SIP budgets**
- **Failure to conform puts \$2.5 billion/yr of federal money at risk statewide**

# **Air Agency Roles**

- **District and ARB prepare technical data**
- **ARB adopts statewide control strategy**
- **District adopts local control strategy and complete plan; submits to ARB**
- **ARB acts on complete plan; submits to U.S. EPA**
- **U.S. EPA approves SIP; commitments for new measures become enforceable**

# **Chronology of Valley Plans**

- **SIPs for 1-hour ozone**
  - 1994 Plan (attainment by 1999)
  - 2002 Plan (progress through 2005)
  - 2004 Plan (attainment by 2010)
- **SIP for particulate matter (PM10)**
  - 2003 Plan (attainment by 2010)



# **ARB 2003 Statewide Strategy**

- **Updated State's 1994 SIP commitments**
- **Defines immediate rulemaking calendar**
- **20 new statewide measures**
- **Ongoing process to identify strategies to achieve further emission reductions**

# **New ARB Measures**

- **Replace/retrofit diesel engines**
- **Parts replacement and improved Smog Check (BAR) for existing autos**
- **Cleaner industrial equipment**
- **More controls on gasoline vapor**
- **Tighter consumer products standards**
- **Expanded Moyer/incentive programs**

# **Staff's Review of the 2004 San Joaquin Valley Ozone SIP**

# **Legal Requirements**

- **Updated technical foundation**
- **Emission reduction strategies**
- **Interim emission milestones for progress**
- **Attainment demonstration for 2010**
- **Transportation conformity budgets**

# Technical Foundation

- **Central California Ozone Study data**
- **Updated emissions and activity**
- **Current air quality modeling tools**
- **Modeling meets performance criteria**

# Plan Overview

- **Demonstrates 24% reduction in ozone-forming emissions from 2000 to 2010 with adopted measures**
- **Includes new State and local measures to achieve additional 10% reduction to meet attainment target**
- **Shows required interim progress**

# Emissions Accounting

Measures	Emission reductions (tons per day)			
	Adopted	PM10 Plan	New Plan	Total
State	176	10	25	211
District	10	36	33	79
Federal	52	-	-	52
<i>Total</i>	<u>238</u>	<u>46</u>	<u>58</u>	<u>342</u>

# **Local Control Strategy**

- **Prior commitments in PM10 Plan**
- **12 new District measures to achieve 23 tpd reductions**
- **10 tpd from longer-term measures (Clean Air Act §182(e)(5))**



# **New District Measures**

- **Concentrated animal feeding operations (SB700)**
- **Open burning (SB705)**
- **Bulk gasoline storage**
- **Industrial coatings and solvents**
- **Solid fuel boilers and stationary turbines**
- **School buses, auto coatings, soil cleanup, composting, plane refueling**

# New State Emission Reductions from ARB 2003 Strategy

	<u>VOC</u>	<u>NOx</u>
PM10 Plan	--	10
Ozone Plan	15	10
<i>Total</i>	<i>15</i>	<i>20</i>

# Summary

- **Plan is technically sound and meets applicable requirements**
- **Staff recommends adoption of 2004 Valley Ozone SIP and submittal to U.S. EPA**